

REMARKS

Claims 1-4, 6 and 8-11 are pending in this application. Claim 1 is independent.

The present invention provides a metal sheet with an anticorrosive coating formed from an anticorrosive paint containing metallic zinc powder and at least one kind of metal salt rust inhibitor, where the metal salt is a salt of a metal that is more base than zinc.

Corrosion prevention by zinc has long been known, and metal salt rust inhibitors are also known. Specification at page 4, lines 4-6.

However, the present inventors are the first to find that a marked anticorrosive effect is produced by the **combination** of zinc powder with a metal salt inhibitor, where the metal salt is a salt of the metal which is more base than zinc. Specification at page 4, lines 6-10. The specification at page 10, Table 1, reproduced below, illustrates the significant improvement in pitting corrosion resistance and red rust resistance achieved by coating a metal sheet with an anticorrosive paint containing the inventive combination of zinc powder (55 - 85 mass% of the paint's solids) and metal salt rust inhibitor (1 - 20.3 mass% of the paint's solids).

Table 1

Sample No.	Metal sheet	Surface preparation	Zinc powder (mass%)	Metal salt rust inhibitor			Pitting corrosion resistance	Red rust resistance	Corrosion resistance after coating
				Kind	Average particle diameter (μm)	Amount used (mass%)			
1	Cold rolled steel sheet	None	65	Aluminum phosphomolybdate	0.38	5.83	A	A	B
2	Cold rolled steel sheet	None	65	Magnesium phosphate	0.37	5.72	A	A	B
3	Cold rolled steel sheet	P (0.8)	85	Magnesium phosphate	0.37	2.02	A	A	A
4	Cold rolled steel sheet	P (0.8)	65	Magnesium phosphate	0.48	6.00	A	A	A
5	Cold rolled steel sheet	P (0.9)	65	Aluminum phosphomolybdate	0.35	1.63	A	A	A
6	Cold rolled steel sheet	P (0.7)	65	Aluminum phosphomolybdate	0.46	5.66	A	A	A
7	Cold rolled steel sheet	P (0.7)	65	Magnesium phosphate plus Aluminum phosphomolybdate	0.45	1.89	A	A	A
8	Cold rolled steel sheet	P (2.1)	80	Magnesium phosphate	0.89	10.3	A	A	A
9	Cold rolled steel sheet	P (2.7)	75	Calcium phosphate	0.65	4.53	A	A	A
10	Cold rolled steel sheet	P (0.3)	55	Aluminum phosphomolybdate	0.75	20.3	A	A	B
11	Cold rolled steel sheet	P (2.0)	65	Magnesium phosphate	0.89	30.5	B	B	A
12	Cold rolled steel sheet	P (2.7)	75	Calcium phosphate	1.35	6.52	B	B	A
13	Cold rolled steel sheet	P (2.2)	75	Calcium phosphate	2.55	5.83	B	B	B
14	Cold rolled steel sheet	P (2.2)	38	Magnesium phosphate	0.75	7.85	B	C	B
(1)	Cold rolled steel sheet	None	None	None	--	--	C	D	C
(2)	Cold rolled steel sheet	None	65	None	--	--	C	D	C
(3)	Cold rolled steel sheet	P (0.8)	65	None	--	--	C	D	C

Parentthesized sample Nos. indicate comparative samples.

In the column of surface preparation, "P" denotes phosphate coating and the parentthesized number that follows P denotes the coating weight (g/m^2).

Claims 1-4, 8 and 11 are rejected under 35 U.S.C. § 103(a) over EP 0722933 A1 ("Shinohara"). In addition, Claim 6 is rejected under 35 U.S.C. § 103(a) over Shinohara and further in view of U.S. Patent No. 4,294,808 ("Wasel-Nielen"). Claim 9 is rejected under 35 U.S.C. § 103(a) over Shinohara and further in view of U.S. Patent No. 4,040,842 ("Mekishima"). Claim 10 is rejected under 35 U.S.C. § 103(a) over Shinohara and further in view of U.S. Patent No. 6,117,251 ("Rivera").

Applicants respectfully traverse these rejections because any *prima facie* case of obviousness based on the cited prior art is rebutted by the significant improvement in corrosion resistance, illustrated in the attached Declaration Under 37 C.F.R. 1.132, that is achieved by the present invention with a **combination** of zinc powder and metal salt rust inhibitor. Because the cited prior art is silent about the improved corrosion resistance that is achieved by the present invention by combining zinc powder and metal salt rust inhibitor, the rejections under 35 U.S.C. § 103 should be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below:

Respectfully submitted,

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Attachment:

Declaration Under 37 C.F.R. § 1.132

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